Black Ranch Flood Plain Enhancement Project
Proposed Action, Purpose and Need
Hat Creek Ranger District, Lassen National Forest
Shasta County, California

Background

The Hat Creek Ranger District is proposing the Black Ranch Flood Plain Enhancement Project (hereafter Black Ranch Project or Project) near Burney Creek, approximately 4 miles northwest of the community of Johnson Park, California, Township 36 North, Range 3 East, sections 17 and 19. The project lies within the Burney – Hat Creek Basins Collaborative Forest Landscape Restoration Project area.

Management direction for the Project falls under the 1992 Lassen National Forest Land and Resource Management Plan (LRMP) and 1993 Record of Decision (ROD) as amended by the 1994 Northwest Forest Plan (NWFP) and ROD.

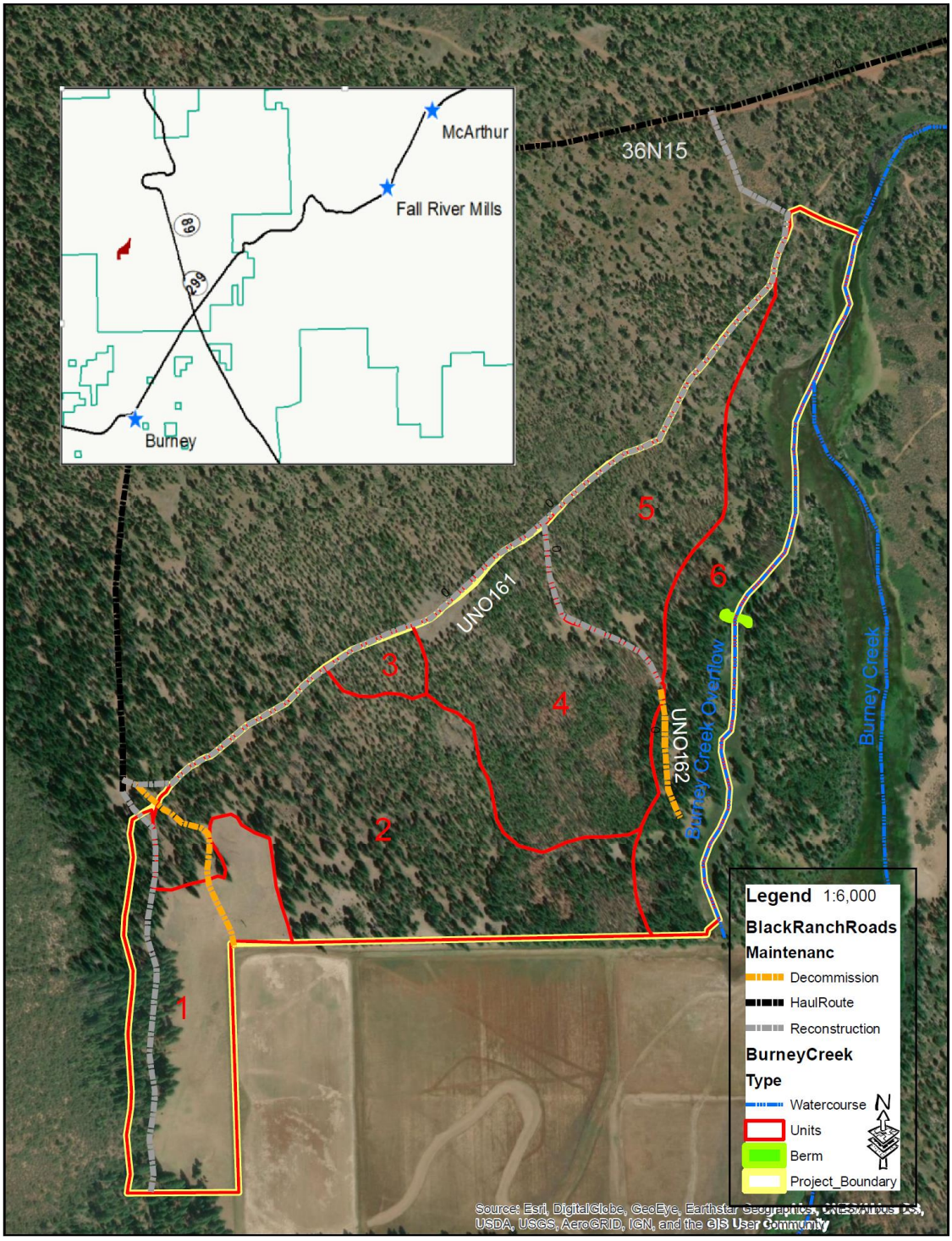
In 2012-2014, the Natural Resource Conservation Service, in conjunction with private land owners, conducted a stream enhancement project on private lands to restore much of the natural hydrology on their part of the floodplain. With the improved upstream hydrology, seasonal flooding on adjacent National Forest System (NFS) lands within the historic flood plain is now occurring, affecting a plantation that was established on the wetland in 1952-53. The new and persistent water is leading to several issues including rampant tree mortality in the low-lying area and inundation of a portion of NFS Road 36N15 causing sedimentation in the floodplain.

Additionally, significant mortality from western pine beetle and IPS bark beetle is occurring within the project area. Beetle mortality has caused an overabundance of large, course woody debris and forest fuels in some areas.

To address these issues and continue the enhancement effort on the NFS portion of the floodplain, the Hat Creek Ranger District is proposing to remove all or portions of the berm which impounds a section of an intermittent channel of Burney Creek, thereby allowing natural flows to resume; relocate approximately 0.31 miles of NFS road 36N15 to bring it above flood level; decommission approximately 0.36 miles of non-system road to reduce sedimentation and other adverse effects to the wetland; salvage harvest the low-lying timber on approximately 53 acres; thin dead, dying, and overly dense trees from approximately 36 acres of higher ground; grapple pile, pile burn, and jackpot burn the heaviest concentrations of surface fuels.

Preliminary analysis suggests that this proposal may fit under one or more categories of actions which are excluded from documentation in an environmental assessment (EA) or environmental impact statement (EIS); however, the decision-maker will determine the level of documentation necessary based on issues identified in scoping.

Figure 1. Map of the Black Ranch Flood Plain Project Area



Purpose and Need

The purpose of the Black Ranch Project is to continue the enhancement effort on the NFS portion of the historic flood plain and address the issues caused by current and foreseeable periods of inundation and tree mortality. The project is intended to:

1. Improve the hydrologic function of the flood plain by removing the existing berm and impoundment and allowing natural flows to resume.
2. Reduce sedimentation into the wetland by decommissioning non-system roads in low-lying areas.
3. Protect NFS infrastructure by relocating a section NFS 36N15 to higher ground to prevent flooding.
4. Address tree mortality in the plantation by removing low-lying trees and thinning higher areas of the plantation to reduce the spread of bark beetles.
5. Address the overabundance of forest fuels by piling burning and jackpot burning excess course woody debris.

Existing Condition, Desired Condition, and Proposed Action

The Black Ranch Project encompasses approximately 108 acres of National Forest Land. The project area falls within the scope of the 1994 Northwest Forest Plan and is divided into two land allocations: Matrix (86 acres) and Riparian Reserves (22 acres).

To meet the objectives listed in the Purpose and Need, the Project has been broken into six smaller areas for site specific evaluation of existing and desired conditions and proposed actions.

Area #1 (17 acres)

Existing Condition

This area is primarily an open grassland with timbered edge above the flat with ponderosa pine and Douglas-fir. It has 100-140 trees per acre averaging 18 inches diameter at breast height. National Forest System Road 36N15 crosses the grassland close to the tree line. Seasonal flooding in the low-lying area is washing away the road prism leading to sedimentation of the flood plain.

Desired Condition

The desired condition for this area is a healthy functioning wetland and an efficient and maintained transportation system that provides public access and meets current and anticipated management objectives.

Proposed Action
Approximately 0.31 miles of National Forest System Road 36N15 would be relocated to higher ground to protect the road prism and reduce sedimentation during high water periods. Timber would be removed to allow for new road construction.

Area #2 (33 acres)

Existing Condition
This is a moderately stocked stand with 80-120 trees per acre of Ponderosa pine, incense cedar, and white fir. Due to the temporal flooding, 10-35 percent of the overstory is experiencing mortality while 90-100 percent of the understory is dead.

Desired Condition
The desired condition for this area is to address the rampant mortality caused by frequent inundation, capture the remaining economic value in this portion of the 1950s plantation, and restore the landscape back to a healthy wetland with improved hydrologic and habitat function.

Proposed Action
Trees in this low-lying area would be sanitation/salvage harvested to arrest mortality due to persistent flooding. All conifers greater than 24 inches diameter at breast height (dbh) would be retained for future snags and course woody debris. Fuels and activity generated material would be grapple piled and the piles burned. Following treatment, this area would be managed as a wetland.

Area #3 (2 acres)

Existing Condition
This small area is primarily Ponderosa pine with scattered white fir and incense cedar. Advanced regeneration of white fir is causing an increase in the amount of ladder fuels into the upper canopies which can lead to crown fire and spotting.

Desired Condition
The desired condition for this area is to restore and maintain a healthy, fire resilient forest, providing for public and firefighter safety. Ladder and surface fuel loading would be reduced to an average of three tons/acre under 90 percent weather conditions, reducing flame lengths to an average of four feet and allowing for safe suppression by fire engines and hand crews.

Proposed Action
On approximately two acres, conifers less than five inches dbh would be removed by hand to decrease the fuels leading into the canopy. Fuels and activity generated material would be grapple piled and the piles burned.

Area #4 (20 acres)

Existing Condition

This area is a plantation consisting primarily of Ponderosa pine. It currently has over 75 percent mortality due to high stand densities and western pine beetles.

Desired Condition

The desired condition for this area is a healthy forest with decreased mortality due to high stand density and an increased level of species, size, and spacial diversity that is resilient to future outbreaks of insects and disease.

Proposed Action

Plantation stands in this area would be sanitation/salvage harvested to remove live and dead trees on approximately 21 acres. Three to five trees per acre of the largest Ponderosa pine would be retained. Fuels and activity generated material would be grapple piled and the piles burned. The site would be prepped and replanted with a mix of Ponderosa pine, sugar pine, and incense cedar for species diversity and resilience to future outbreaks of insects and disease.

Area #5 (14 acres)

Existing Condition

Forest stands consist primarily of Ponderosa pine with scattered white fir and incense cedar. Stands are low to moderately stocked due to insect and disease activity. Stands with the highest beetle damage are generally growing in over-dense areas dominated by a single host species. Mortality is resulting in an abundance of course woody debris and forest fuels.

Desired Condition

The desired condition for this area a healthy diverse forest, that is less densely stocked and more resilient to fire and future outbreaks of insect and disease. Ladder and surface fuel loading, reduced to an average of three tons/acre under 90 percent weather conditions, would allow for safe suppression by fire engines and hand crews by reducing flame lengths to an average of four feet should an ignition occur.

Proposed Action

The stands in this area would be commercially thinned to reduce the risk of further bark beetle infestations. The majority of timber removed would be dead and dying Ponderosa pine. Fuels and activity generated material would be grapple piled and the piles burned. Following piling, the area would be jackpot burned. (Jackpot burning is prescribed burning of scattered concentrations of surface fuels. Burning does not cover the majority of the unit, generally resulting in less than 50 percent duff reduction.)

Area #6 (22 acres)

Existing Condition

The forested area has both natural stands and plantation consisting of Ponderosa pine, with lesser amounts of incense cedar and white fir, and a scattering of Douglas fir. The majority of the stands and larger size classes have not been treated in the past. There is currently a berm with a small impoundment that interrupts the natural stream flow of an intermittent channel of Burney Creek.

Desired Condition

The desired condition for this area is uninterrupted intermittent stream flow of Burney Creek. Forest stands would be diverse in both species and size class, averaging approximately 120 square feet ($ft^{2)}$ of basal area.

Proposed Action

A berm and impoundment would be removed to restore the natural hydrology of the Burney Creek overflow channel. The depression would be filled using the existing soil from the berm and contoured to match the original wetland topography.

The forest stands in this area would be commercially thinned in areas above optimal stocking levels (averaging 120 ft^2 of basal area) while improving composition and size class and retaining more than 50 percent of the existing canopy.

Transportation

Existing Condition

The project area has existing National Forest System and non-system (temporary) roads. A portion of NFS 36N15 in Area #1, non-system road UNO211, and the southern portion of UNO162 cross the wetland area and are being seasonally inundated resulting in surface erosion and other adverse ecological impacts.

Desired Condition

The desired condition for transportation is an efficient and maintained transportation system that provides safe public access and meets current and anticipated management objectives without adverse resource impacts.

Proposed Action

This project proposes to utilize existing temporary roads on higher ground throughout the project area. Approximately 0.31 miles of 36N15 would be relocated above flood stage and approximately 0.36 miles of non-system road in the low-lying area would be decommissioned to reduce sedimentation and other adverse ecological effects to the wetland.

Figure 2. Table of Proposed Road Actions

Route	Length (mi)	Proposed Action
36N15	0.31	Relocation/Reconstruction
UNO162	0.11	Decommission
UNO211	0.25	Decommission